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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/770,737	02/03/2004	Guan-Shian Chen	AMAT/7164.C1/CMP/ECP/RKK	1009
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PATTERSON & SHERIDAN, LLP 3040 POST OAK BOULEVARD, SUITE 1500 HOUSTON, TX 77056			EXAMINER LAMB, BRENDA A	
			ART UNIT	PAPER NUMBER
			1734	
DATE MAILED: 10/04/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/770,737	Applicant(s) CHEN ET AL.	
	Examiner Brenda A. Lamb	Art Unit 1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2004 and 17 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/28/04 & 6/17/04</u> . | 6) <input type="checkbox"/> Other: _____ |

Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is confusing since it unclear what a electroless activation cell encompasses especially since dependent claim 7 claims the electroless activation cell is configured to selectively dispense at least one of a substrate pre-cleaning solution and an electroless activation solution onto the substrate and therefore does not require activation of the substrate rather may be limited to just pre-cleaning of the substrate.

Claim 1 is confusing since it unclear what a electroless deposition cell encompasses especially since dependent claim 8 claims the electroless deposition cell is configured to selectively dispense at least one of a substrate post-cleaning solution and an electroless deposition solution onto the substrate and therefore does not require activation of the substrate rather may be limited to just post-cleaning of the substrate.

Claim 11 is confusing since the preamble of the claim recites an electroless processing system yet the elements in the body of the claim fails to require a means for depositing an electroless deposition with the second fluid processing cell not required to depositing an electroless deposition solution onto the substrate.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 4, 10, 12-16 and 18-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains

Art Unit: 1734

subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The instant application is a continuation application based on parent application US Patent Application Serial Number 10/274,721 now US Patent No. 6,669,380 which fails to teach the following: a means for centering the substrate on the substrate support member; a valve which is selectively actuatable; a substrate centering member; a substrate centering member comprises a plurality of eccentric rotatable centering posts positioned radially around a central axis of the substrate support member; a gas delivery system in fluid communication with the interior volume of the enclosure; a vacuum chuck; a substrate shuttle; and substrate support member has an outer diameter smaller than outer diameter of the substrate.

Note if applicant disagrees then applicant needs to provide out support in the originally specification (page number and line number) and/or drawings. Note in responding to this rejection it is noted that when one employs means plus function language in a claim such as means for centering the substrate on the substrate support member as set forth in claim 4 then applicant must set forth in the specification adequate disclosure showings what is meant by that language. See *in re Donaldson Co.* 16 F.3d 1189, 1195 29 USPQ2d 1845, 1850 (FED. CIR. 1994).

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA

Art Unit: 1734

1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 9, 11 and 17 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-25 of U.S.

Patent No. 6,699,380 (Chen et al) in view of Dordi et al 6,267,853.

Chen et al teaches the design of substrate processing system comprised of the following elements: a substrate transfer robot; a first fluid processing cell positioned in the enclosure, the first fluid processing cell/electroless activation cell being configured to dispense at least one of an precleaning solution; and a second fluid processing cell/electroless deposition cell being configured to dispense at least one of an electroless deposition solution onto the substrate. Chen et al fails to teach a processing enclosure positioned in communication with a processing platform and the above cited robot and first and second processing cells are arranged within the enclosure. However, it would have been obvious to arrange the Chen et al apparatus which includes the robot and first and second fluid processing cells within an enclosure positioned on a processing platform since Dordi et al shows arranging processing cells and a robot for transferring the substrates between the cells within an enclosure which is in communication with a processing platform for the obvious reason of greater control of process conditions which includes reducing contamination of the above cited cells and

Art Unit: 1734

robot. Thus claims 11 is obvious over the above cited references. With respect to claim 1, the same rejection applied to claim 11 is applied here. Chen et al claims another robot positioned within the interface section. With respect to claims 9 and 17, Chen et al claims the processing module is detachably positioned with respect to platform/factory interface.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-8, 11-13 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Dordi et al 6,267,853.

Dordi et al '853 teaches an electroless processing system comprising: a processing enclosure positioned in communication with a processing platform; a substrate transfer robot 242 positioned in the enclosure; a first fluid processing cell positioned in the enclosure, the first fluid processing cell being configured to dispense at least one of an electroless pre-cleaning solution and an electroless activation solution onto the substrate, and a second fluid processing cell positioned in the enclosure, the second fluid processing cell being configured to dispense at least one of an electroless deposition solution and an electroless post cleaning solution onto the substrate. This Dordi et al '853 teaches every element of the claimed apparatus set forth in claim 11. With respect to claim 1 and 7-8, the same rejection applied to claim 11 is applied here. Dordi et al '853 teaches a substrate transfer robot 228 positioned in an interface section. With respect to claims 2-4 and 12-16, Dordi et al '853 teaches his cells as depicted in his Figures 14 and 17 comprise face up processing cells. Further, Dordi et al '853 teaches the cells each comprise a rotatable substrate support member, a fluid dispensing arm and a substrate centering member. Further, Dordi et al '853 shows in Figure 14 and 17 the substrate support member has an outer diameter that is smaller than an outer diameter of the substrate being processed. Further, Dordi et al '853 teaches the substrate support member for the cells as shown in Figures 14 and 17 is a vacuum chuck (elements 2124 and 3026). With respect to claims 5-6, Dordi et al '853 teaches the apparatus is comprised of a plurality of cleaning cells thereby reading on an

additional substrate cleaning cell having structure within the scope of claim 6 and in communication with the interface section.

Claims 10, 16 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dordi et al 6,267,853.

Dordi et al '853 is applied for the reasons noted above. Dordi et al '853 teaches at column 9 lines 47-56 that an alternative to the part of the substrate centering means in his cells, a spider clamp, is a plurality of pins positioned around the vacuum which support the wafer when the wafer is rotated. Therefore, it would have been obvious to modify the Dordi et al '853 apparatus by substituting its substrate centering member for both the recited cells with the known in the art wafer substrate centering means which includes a plurality of pins positioned around the vacuum which support the wafer when the wafer is rotated since Dordi et al '853 teaches its use as an alternative to the substrate centering means shown in his Figures. With respect to claims 10 and 18, Dordi et al '853 teaches the use of a selectively actuatable access valve 922 positioned to allow for access into an enclosure by the substrate transfer robot. Dordi et al fails to teach the first fluid processing cell configured to dispense at least one of an electroless pre-cleaning solution and an electroless activation solution onto the substrate, and a second fluid processing cell positioned in the enclosure, the second fluid processing cell configured to dispense at least one of an electroless deposition solution and an electroless post cleaning solution onto the substrate each having an access valve which may be selectively actuatable. However, it would have been obvious to modify the Dordi et al '853 enclosure so as to provide a selectively actuatable access valve 922

Art Unit: 1734

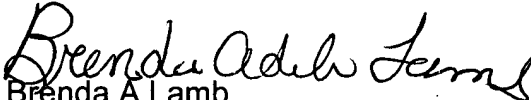
positioned to allow for access into an enclosure by the substrate transfer robot since Dordi et al '853 teaches use of such as valve on an wafer processing enclosure for the obvious advantages of enabling one maintain desired process conditions within the enclosure. With respect to claim 19, Dordi et al '853 teaches an electroless plating apparatus comprising the following elements: a primary substrate transfer robot 228 positioned on a mainframe, at least one electroless processing enclosure positioned on the mainframe, the electroless processing enclosure; a first fluid processing cell as shown in Figure 14 which is positioned on the processing volume and configured to apply a cleaning solution to a substrate; a second fluid processing cell as shown in Figure 17 which is positioned in the processing volume and configured to apply an electroless plating solution to the substrate, and a substrate shuttle 242 positioned between the first and second fluid processing cell in the processing volume, the shuttle being configured to transfer substrates between the first and second fluid processing cells. Dordi et al '853 fails to teach the processing enclosure is comprised of a sealable enclosure defining a processing volume and having at least one selectively actuated access door. However, it would have been obvious to modify the Dordi et al '853 enclosure so as to provide a selectively actuatable access valve 922 positioned to allow for access into an enclosure by the substrate transfer robot since Dordi et al '853 teaches use of such as valve on an wafer processing enclosure for the obvious advantages of enabling one maintain desired process conditions within the enclosure. With respect to claim 20, Dordi et al '853 teaches the apparatus is comprised a gas delivery system 838 in fluid communication with an interior volume of the enclosure.

Art Unit: 1734

Claims 9 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dordi et al 6,267,853 in view of Davis 5,779,799.

Dordi et al '853 is applied for the reasons noted above. Dordi et al '853 fails to teach the electroless processing module is removable from the interface section or the processing enclosure is detachably positioned in communication with the processing platform. However, Davis discloses arranging a wafer treating system having a plurality of treatment apparatuses wherein each treatment apparatus is a self-controlled and contained module such that one can remove one section/module from the remaining sections/modules. Therefore, it would have been obvious to modify the Dordi et al '853 apparatus by arranging its processing module is separable or removable from the interface section or such that the processing enclosure is detachably positioned in communication with the processing platform for the advantages taught by Davis of making treatment sections of wafer treating apparatus highly modular – minimize downtime for maintenance.

Any inquiry concerning this communication should be directed to Brenda A. Lamb at telephone number (571) 272-1231. The examiner can normally be reached on Monday and Wednesday thru Friday with alternate Tuesdays off.


Brenda A Lamb
Examiner
Art Unit 1734